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EXAMINER

LESLIE, MICHAEL S

ART UNIT

PAPER NUMBER

3745

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/736,806

Applicant(s)

BUSCH, SVAN

Examiner

Michael Leslie

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-46 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 24-46 is/are rejected.
- 7) ☒ Claim(s) 27, 41 and 42 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/27/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: Page 18, Line 4, "spherical" should be --conical--.

Appropriate correction is required.

Claim Objections

Claims 27, 41, and 42 are objected to because of the following informalities: Claim 27, Line 1, "claim 24" should be --claim 25--; Claim 41, Line 2, "support device" should be --auxiliary device--; Claim 42, Line 1, "claim 42" should be --claim 41--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 38-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 38 recites "an adjustable valve installed parallel to the hold-open valve", it is unclear in what manner the "adjustable valve" is "parallel to the hold-open valve". The specification does not disclose a parallel relationship between the adjustable and hold-open valves, and from the drawings, Figs. 7 & 8, the "adjustable valve" is shown arranged in a

direction parallel to the “hold-open valve”, but is hydraulically in series with the “hold-open valve”.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 24, 25, 28, 29, 30, 33, 35, and 38-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Brunner (5259293).

Brunner discloses an electrohydraulic servo drive having a hydraulic circuit for holding a load including a hydraulically controlled holding valve (6, 11), a piston that moves in a piston space subjected to a hydraulic pressure greater than the control pressure in the holding valve, and means for separating forward and return flow. Wherein the holding valve includes a 2/2-way valve (6) and further includes a control piston (7) and a non-return valve (11), at least one of the control piston and non-return valve is spring loaded (7'), the non-return valve is provided in a bypass (10) around the 2/2-way valve, an adjustable valve (13), for controlling the switching speed of the 2/2-way valve, having a closing body (15) acting on a spring (18) so the valve closes as a function of pressure, and the adjustable valve is position between a hydraulic line leading from a pump (4, 22) and a hydraulic line (12, 5) leading to a tank.

Note: The recitation of “a door” is viewed as intended use for the “electrohydraulic servo drive” and is not limiting.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brunner in view of Herion et al (3699993).

Brunner discloses an electrohydraulic servo drive as described above with respect to claims 25 and 28, respectively, but does not specifically teach that the 2/2-way valve is a lockable non-return valve or that the non-return valve is integrated into the control piston. Herion et al disclose a hydraulic circuit having a 2/2-way valve (76 or 78) in the form of a lockable non-return valve (38 or 36) and the non-return valve is integrated into the control piston (14 or 16). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the 2/2-way valve of Brunner by having it in the form of a lockable non-return valve and to integrate the non-return valve into the control piston as taught by Herion et al for the purpose of controlling flow through the hydraulic circuit.

Claims 27 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brunner in view of Haussler et al (6098647).

Brunner discloses an electrohydraulic servo drive as described above with respect to claims 25 and 28, respectively, but does not specifically teach that the 2/2-way valve is a slide

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valve or that the 2/2-way valve has a sealing surface smaller than an effective piston surface of the control piston. Haussler et al disclose a hydraulic circuit having a 2/2-way valve (Fig. 2) in the form of a slide valve (3) and the 2/2-way valve has a sealing surface (4) smaller than an effective piston surface (45) of the control piston (20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the 2/2-way valve of Brunner by having it in the form of a slide valve and to have a sealing surface of the 2/2-way valve smaller than an effective piston surface of the control piston as taught by Haussler et al for the purpose of controlling flow through the hydraulic circuit.

Claims 32, 37, 41-44, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brunner in view of Nagel (5373121).

Brunner discloses an electrohydraulic servo drive as described above with respect to claim 25, and further teaches a driven pump (P) that produces the hydraulic pressure for controlling the holding valve, but does not teach the specifics of the pump driving system. Nagel teaches an electrohydraulic servo drive having a holding valve (~26) and a pump driven by a motor being one of a DC motor, an electronically commutated motor, a speed-controlled AC motor, and a speed-controlled 3-phase motor. Nagel further teaches a motor amplifier (36) that controls the motor speed by pulse width modulation, a controller/current regulator (32) for the motor amplifier including a D/A converter, and a voltage supply (not shown) connected to the controller/current regulator and motor amplifier. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electrohydraulic servo drive of Brunner to include a motor, motor amplifier, controller/current regulator, and voltage

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supply as taught by Nagel for the purpose of controlling the pump of an electrohydraulic servo drive.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brunner in view of Avitan (5526673).

Brunner discloses an electrohydraulic servo drive as described above with respect to claim 25, but does not teach the use of a throttle valve in the hydraulic circuit. Avitan discloses an electrohydraulic servo drive having a hydraulic circuit and holding valve (26) further including a throttle valve (27) in the hydraulic circuit. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electrohydraulic servo drive of Brunner to include a throttle valve in the hydraulic circuit as taught by Avitan for the purpose of limiting the return flow to control the return speed of the actuated element.

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brunner in view of Nagel as applied to claim 43 above, and further in view of Cardenas Franco et al (4367087).

Brunner as modified discloses an electrohydraulic servo drive as described above with respect to claim 43, and further teaches a piston for driving the actuated element, but does not teach a pinion driven by the piston and a position sensor cooperating with the pinion wherein the controller/current regulator is connected to the position sensor. Cardenas Franco et al disclose an electrohydraulic servo drive having a pinion (7) driven by a piston (16) and a position sensor cooperating with the pinion transmitting signals back to the motor control (Column 3, Lines 10-49). It would have been obvious to one having ordinary skill in the art at the time the invention

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was made to further modify the system of Brunner as modified by including a pinion driven by a piston and a position sensor cooperating with the pinion wherein the controller/current regulator is connected to the position sensor as taught by Cardenas Franco et al for the purpose of controlling the element actuated by the electrohydraulic servo drive.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. 5996466, 5048644, and 6843340 disclose electrohydraulic servo drives with holding valves. 6198241, 6175204, 6329771, and 4143310 disclose motor control systems.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Leslie whose telephone number is (571) 272-4819. The examiner can normally be reached on M-F 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ML

April 13, 2005



Michael Leslie
Patent Examiner
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4/16/05